July 14, 1931. R. H. ENDSLEY 1,814,589

PLIERS

Filed Feb. 23, 1928

Fig. 1.

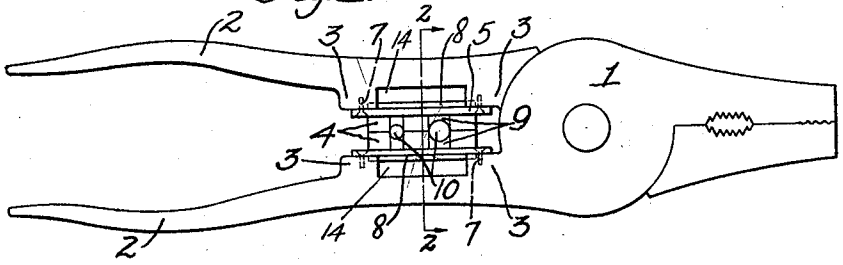


Fig. 2.

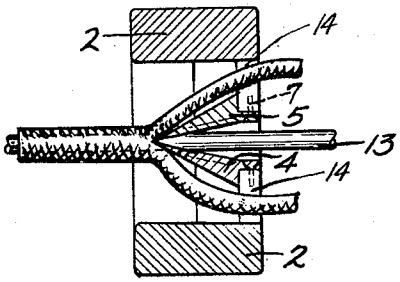


Fig. 3.

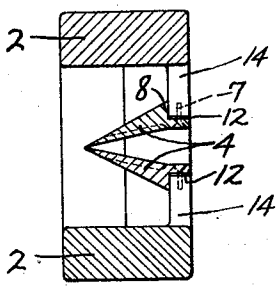


Fig. 4.

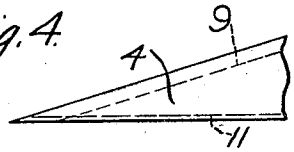


Fig. 5.

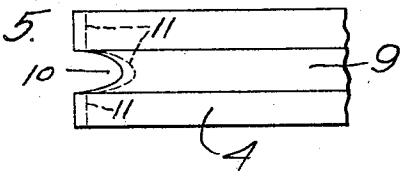


Fig. 6.

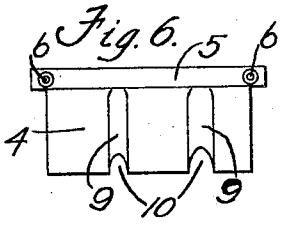
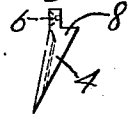


Fig. 7.



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UNITED STATES PATENT OFFICE

ROY H. ENDSLEY, OF MISHAWAKA, INDIANA, ASSIGNOR OF ONE-THIRD TO JOHN L. BOWMAN, OF SOUTH BEND, INDIANA, AND ONE-THIRD TO ABEL R. ENDSLEY, OF TUCSON, ARIZONA

PLIERS

Application filed February 23, 1928. Serial No. 256,379.

The invention relates to pliers, particularly to the type used by electricians and linemen, and has for its object to provide a device of this character with cooperating converging tapering straight edged blades secured to the inner sides of the handles thereof, said blades having sharp edged registering recesses formed in the straight edges thereof which are adapted to fit snugly around a wire when the pliers are closed, and which straight edges serve to longitudinally bisect the insulation in advance of the stripping thereof from the wire by the action of the edged recesses.

A further object is to provide a device of this character wherein the blades are not exposed, so that the danger of accidentally cutting the clothes or hands is entirely eliminated.

A further object is to provide a device of this character which is so constructed that it may be honed or sharpened without changing the size of the recesses in the blades.

A further object is to provide a device of this character in which the blades are removable and adjustable.

A further object is to provide a device of this character with which wire having vulcanized insulation which is not free to slide or slip thereon may be scraped and stripped of its insulation in one operation.

A further object is to provide a device of this character which is compact and simple of structure and cheap to manufacture.

With the above and other objects in view, the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawings, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed without departing from the spirit of the invention.

Figure 1 is a plan of the pliers showing the blades secured therein in operative position.

Figure 2 is a view taken on line 2—2 of Figure 1.

Figure 3 is a modified view taken on line 2—2 of Figure 1 showing positioning of the blades after their size has been reduced by sharpening.

Figure 4 is a fragmentary side view of the blade.

Figure 5 is a fragmentary plan view of the blade.

Figure 6 is a plan view of the blade.

Figure 7 is a side view of the blade.

Referring to the drawings, the numeral 1 designates pliers of the conventional type having handles 2, and spaced flanges 3 integrally formed with the handles 2, which flanges 3 on each handle 2 of the pliers register with a similar flange 3 on the other handle 2. Secured to the flanges 3 on each handle 2 of the pliers is a blade 4 having a flange 5, the ends of which extend beyond the blade. In the flange 5, at each end thereof, are countersunk holes 6, which are adapted to receive the screws 7 which secure the blade 4 to the flanges 3 of the pliers. The blades 4 extend angularly inwardly from the flanges 5 and are positioned to touch when the pliers are closed. To secure a proper positioning of the blades, each has a shoulder 8, the ends of which rest against the under side of the flanges 3 of the pliers. The inner faces of the blades 4 have grooves 9 which in cross section have the shape of a segment of an ellipse. The grooves 9 register in both blades and form registering recesses 10 in the edges of the blades 4. Thus when the pliers are closed, and the straight edged portions of the blades 4 touch, an opening is formed through the blades, the projection of which, on a plane parallel to the face of the pliers, is a perfect circle. The shape of the groove in cross section is the segment of an ellipse whose shape is determined by the angle at which the blades are disposed in relation to the face of the pliers since it must be such that the recesses formed have a circular projection on a plane parallel to the face of the pliers. The grooves 9 are so formed that the edges of the recesses 10 are sharp, so that when a wire 13 of a size to fit the opening, is placed in the opening, its insulation will be cut longitudinally at opposite points

thereof to bisect the same and the edged recesses will cut through and make a scraping contact with the wire 13, and as the wire 13 is pulled through the opening the insulation will be stripped from it and the sharp edges of the opening will scrape the wire 13 at the same time. By longitudinally bisecting the insulation in the cutting operation each half may pass through the openings 14 provided between the blades 4 and the handles 2, as clearly shown in Figure 2, and thus not interfere with the stripping operation. The blades 4 may be provided with a suitable number of registering grooves 9 of different sizes to fit different sizes of wire in ordinary use, such as grooves which will form recesses to receive #12, #14 and #16 copper wire, which sizes are widely used. It will be seen that these blades may be sharpened without altering the size of the recesses 9 if they are honed or ground on a plane parallel to the flat face of the blade. For instance, if the blade was ground down to the dotted line 11 in Figures 4 and 5, the recess 10 therein would be of identical size and shape with the recess as it was before the blade had been so ground down. However, when the blades have been ground down they will not touch when the pliers are closed, and it is therefore necessary to insert shims 12 as shown in Figure 3, in order to bring the edges of the blades into contact with each other.

From the above it will be seen that a device is provided with which wire may be stripped of its insulation and scraped at the same time; that the blades used therein are so positioned that they cannot cut the hands or clothes of the person using them; that the blades are so constructed that they may be honed and sharpened without altering the size of the recesses in the blade; that the device is very simple and compact, and cheap to make; and that the blades are adjustable to compensate for reduction in size due to sharpening thereof.

The invention having been set forth, what is claimed as new and useful is:

1. The combination with pliers having pivoted handle members, of angularly converging blades and means for connecting said blades to said handles in spaced relation, said blades having cooperating recesses formed in their cutting edges.

2. The combination with pliers having handle members each comprising a pair of spaced inwardly directed flanges, of complementary angularly converging blades carried by said flanges in spaced relation to said handle members and having recesses interrupting the edges of the blades.

In testimony whereof I affix my signature.

ROY H. ENDSLEY.